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# ENGINEERING SERVICES FOR RURAL ROADS REHABILITATION CONTRACT NO: EDH-I-00-08-00023

## MONTHLY PROGRESS REPORT – AUGUST 2015

11 September 2015

# ENGINEERING SERVICES FOR RURAL ROAD REHABILITATION (ES3R) CONTRACT NO. EDH-I-00-08-00023

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11 September 2015

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government. This report was prepared for the U.S. Agency for International Development. It was prepared by CDM International, Engineering Services Rural Roads Rehabilitation (ES3R)

## Acronyms

A & E	Architect and Engineer
BOQ	Bills of Quantity
COP	Chief of Party
COR	Contracting Officer Representative
EMMP	Environmental Mitigation and Monitoring Plan
ES	Environmental Specialist
ESMMP	Environmental & Social Mitigation & Monitoring Plan
ES3R	Engineering Services for Rural Roads Rehabilitation
ETL	Engineering Team Leader
FED	Food and Enterprise Development
FTF	Feed the Future
FTL	Field Team Leader
F2M	Farm to Market
F2MRR	Farm to Market Road Rehabilitation
GIS	Geographic Information System
GOL	Government of Liberia
LESSP	Liberia Energy Sector Support Project
LMWP	Liberia Municipal Water Project
MOF	Ministry of Finance
MPEA	Ministry of Planning and Economic Affairs
MPW	Ministry of Public Works
OCA	Organizational Capacity Assessment
PIRS	Performance Indicator Results Sheet
RE	Resident Engineer
SI	Site Inspector
USAID	United States Agency for International Development

# **ENGINEERING SERVICES FOR RURAL ROADS REHABILITATION (ES3R)**

## **MONTHLY PROGRESS REPORT AUGUST 2015**

### **LIST OF CONTENTS**

#### **1. SUMMARY PROJECT DESCRIPTION**

1.1	Introduction	5
1.2	Objectives	6

#### **2. AUGUST 2015 OVERVIEW**

2.1	Previous Month Highlights Summary	7
2.2	Details of Highlights	8
2.2.1	Project Deliverables and Documentation	8

#### **3. PROJECT OBJECTIVES PROGRESS**

3.1	Team Structure	10
3.2	Objective 1 – Construction Oversight	12
3.3	Objective 2 – Design and Contract Documents	16
3.4	Objective 3 – Training and Mentoring	20

#### **4. PROJECT CHALLENGES**

21

#### **5. OUTLINE SCHEDULES**

5.1	Outlines Schedule for September 2015	22
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# 1. SUMMARY PROJECT DESCRIPTION

## 1.1 Introduction

The U. S. Agency for International Development's (USAID) 'Engineering Services for Rural Roads Rehabilitation (ES3R)' was awarded to Camp Dresser McKee International (CDM) under the following USAID contract number: EDH-I-00-08-00023 and task order AID-669-TO-13-00002 which records the period of performance as 8 October 2013 to 20 October 2015.

Liberia's Farm to Market Rural Roads (F2MRR) activity is allied to the objectives of the Feed the Future (FTF) initiative, which is a U.S. government initiative, which aims to address the root causes of global hunger by sustainably increasing agricultural productivity. F2MRR will provide infrastructure investment in the rehabilitation of rural farm-to-market roads to support the following:

- USAID /Liberia FTF program Food and Enterprise Development (FED),
- Capacity development for routine maintenance systems within the Government of Liberia (GOL),
- Capacity development of Ministry of Public Works (MPW) rural roads engineers and local A & E firms,
- Development of alternative low volume road pavement pilot projects, standards and design specifications.

## **1.2 Objectives**

Within F2MRR, ES3R will be an implementing mechanism which will undertake the following objectives:

### **Objective 1:**

Provide construction oversight for three (3) local contracts for the rehabilitation of a total of 83.5 kilometers farm-to-market roads in Bong, Lofa, and Nimba counties from 2013 to 2015.

### **Objective 2:**

Produce engineering designs and construction documents for the 450 kilometers farm-to-market roads in Bong, Lofa, Nimba, and Grand Bassa counties to be rehabilitated in 2015 to 2018.

### **Objective 3:**

Training and pre-qualification of five (5) local architect-engineer firms capable of providing oversight for road rehabilitation activities by 2015.

This monthly progress report presented in respect of the project covers the progress of the works for the period from 1 August 2015 to 31 August 2015. In addition, the report details the status and approach to project challenges and presents an outline schedule for the forthcoming month.

# 1. AUGUST 2015 OVERVIEW

## Preamble

During this reporting period, the ES3R team was engaged in field surveys, interventions, and other geotechnical and hydrology data collection in preparation for road and culvert design. Construction oversight activities in the three Counties continued to be carried out by the team, along with capacity building activities in the planning of on-the job training to the A&E engineers.

## 2.1 August 2015 Highlights Summary

The table below provides a summary of the Project highlights:

Date	Description	Comment
<b>August 1, 2015</b>	Arrival of the Bridge Design Team Leader	To USAID/Liberia
<b>August 3, 10, 17, 2015</b>	Submittal of weekly updates	To USAID Liberia
<b>August 4, 2015</b>	Quarterly Rural Infrastructure Meeting with MPW and other stakeholders	USAID COR, Deputy Minister of MPW & CDM
<b>August 22 &amp; 24, 2015</b>	Submittal of weekly updates	To USAID Liberia
<b>August 12, 2015</b>	ETL and Nimba FTL proceeded on vacation leave respectively	To USAID/Liberia
<b>August 16, 2015</b>	Commencement of road, bridge and culvert design in Voinjama, Banga and Ganta	ES3R team
<b>August 25, 2015</b>	Start of workshop on Business Development for the Five A&E firms' principals and managers	To Five A&E firms
<b>August 31, 2015</b>	Conclusion of the on-the job training for the Five A&E engineers	To USAID/Liberia
<b>August 31, 2015</b>	Submittal of weekly updates	To USAID/Liberia

## **2.2 Details of Highlights**

### **2.2.1 Project Deliverables and Documentation**

#### **Monthly Progress Report**

The last monthly report submitted was for the month of July 2015.

**The main contains of the report are:**

- Highlights Summary
- Details of Highlights
- Progress Meetings with USAID
- Field Visits to Counties Sites
- Project Deliverables and Documentation
- Design of Bridgeworks
- Revised Work Plan
- Objective 1 – Construction Oversight
- Objective 2 – Design and Contract Documents
- Objective 3 – Training and Capacity Building
- Performance Management Plan – PIRS

#### **Letters / E mails from USAID/Liberia**

The following communications addressed to the ES3R Project from USAID were received during the reporting period:

- August 11, 2015: Email from USAID COR for follow-up of various issues discussed in meeting in Banga the previous week.
- On August 13, email from USAID COR suggesting to plan, as an important event, the presentation of the 5 Engineering Firms upon completion of the on-the job-training during the workshop



- On August 21, 2015: to USAID COR on information on temporary arrangement of field staff in lieu with Field Team Leader and Field Team Leader vacation leave from 22 Aug and 24 Aug respectively, and that would be reporting back to project on 14 Sep 2015.
- August 26, 2015: Email from USAID COR approving travel request for Robert Talmage to facilitate the workshop on Roads to Business Development.
- August 26 2015: Email from USAID COR informing that the USAID Mission Deputy Director would attend to the workshop closure.
- August 26, 2015: Email to USAID COR email briefing on development of first days of activities in workshop being facilitated by CDM.
- August 26, 2015: Email from USAID COR requesting ES3R to submit the Punch List for Bong County substantially completed road links
- On August 27, USAID COR requested the ES3R to get confirmed from the COP the full attendance by the A&E on-the job trainees to Workshop closure.

## 2. PROJECT OBJECTIVES PROGRESS

### 3.1 Team Structure

The field based teams have adopted the revised structure illustrated in the Y2 Work-plan is as follows:

#### **Team 1**

Responsible for road and pipe culvert design in the Counties of Lofa and Nimba in addition to construction oversight in Lofa.

Field Team Leader: Geoffrey Kibisi; responsible for coordinating and managing field surveys, construction oversight and national staff mentoring.

Resident/Design Engineer: Roosevelt Ballah; responsible for field survey activities.

Inspector Engineer: George OC Kaicora; responsible for road construction oversight.

Surveyor: provided by Geo Surv; responsible for topographic survey in support of surveys #1 and 2.

#### **Team 2**

Responsible for road and pipe culvert design in the Counties of Grand Bassa and Bong in addition to construction oversight in Bong County.

Field Team Leader: Frederick Were-Higenyi; responsible for Grand Bassa/Bong Team. Dr. Were-Higenyi has been accepted as replacement of James Clarke in the post of Engineering Team Leader by USAID. It is proposed as per the Inception Report the promotion of the Resident Engineer, Richard Freeman to Field Team Leader.

Resident/Design Engineer: Mr. Jusu is in charge of the field survey and geotechnical/hydrology investigation.

Assistant Engineer (Staff from MPW); position for a Feeder Road Engineer from the Ministry of Public Works.

Topographic Survey Team: Geo Surv; responsible for topographic survey in support of surveys 1 & 2 and bridges.

### **Team 3**

Box Culvert Design, Nimba, Grand Bassa, Lofa and Bong as well as construction oversight in Nimba County.

Field Team Leader: Jackson Kirungi; responsible for coordination of topographic survey, hydraulic and structural assessments, location of structure, materials investigation and construction procedures.

Resident/Design Engineer: James Appleton; responsible for topographic survey and supervision of materials investigation.

Assistant Engineer: (Staff from MPW); position for a Feeder Road Engineer from the Ministry of Public Works to be mobilize in first week of August.

### **Team 4**

Bridge design Team, for Nimba, Grand Bassa, Lofa, and Bong bridges.

Team mobilization took place on 1 August 2015

Many key activities of the Bridge Team require low level flows in watercourses to be bridged.

## 3.2 Objective 1 – Construction Oversight

### 3.2.1 General

All construction Contractors received contract modifications up to the end of this reporting period. Westwood Inc., 21<sup>st</sup> Century and SSF Enterprise Inc. have fully mobilized and made progress on clearing works.

Work activities during the reporting period include completion works within the Contractor's original scope for Nimba and Bong, and new work from the Phase II road links for Nimba, Bong, and Lofa counties.

The below table describes the status of each county where construction is on-going:

Description	Westwood Corp: BONG	SSF: LOFA	21 <sup>st</sup> Century: NIMBA
Contract Award	22 Jan 2014	27 Jan 2014	22 Jan 2014
Modification	7 April 2015	26 May 2015	7 April 2015
Contract Period; days initial scope comp. Maintenance and defects liability	16 months 8 months	16 months 8 months	16 months 8 months
Additional scope – to complete Maintenance and defects liability	12 months 8 months	12 months 8 months	15 months 8 months
Extension of time due to EVD		3 months	
Time Elapsed Original scope (end July 2015)	113%	Completed	113%
Additional scope	33%	20	26%
Comp. date for construction: initial scope	22 May 2015	27 August 2015	22 May 2015
Comp. date for construction additional works	6 April 2016	25 May 2016	6 July 2016
Overall Assessed Completion, Original scope	92%	Completed	91%
Additional scope	10%	18%	8.11%
Total Contract Value, Original scope	\$1,895,141.86	\$592,384	\$843,228.25
Additional scope	<u>\$1,861,722.41</u>	<u>\$973,851.35</u>	<u>\$2,183,507</u>
Total	\$3,756,864.27	<u>1,566,235.35</u>	\$3,026,286

Value of works certified as of July 2015, USD	\$1,600,162	\$578,706	\$689,601
Additional scope	\$0	\$0	\$159,174

### 3.2.2 Bong County

Contract and modification have been awarded to Westwood Corp. Inc.

Construction of three roads totaling 49.6 km is ongoing under the original scope (Phase –I). The contractor’s performance is lower than anticipated in the reporting month due to the seasonal rains.

**Phase I** road links is shown below.

1.	Tolomai - Leleh – Palala	29.9 Km
2.	Gbenequelleh – Janyea	10.5 Km
3.	Gbenequelleh - Duita to Molly Town	9.2 Km
<b>TOTAL</b>		<b>49.6 Km</b>

**Phase II** road links and contract data is shown below.

1.	Taylorta - Marlonta to Yandewoin	14.1 Km
2.	Gbondoi - Gbarnla Road	17.5 Km
<b>TOTAL</b>		<b>31.6 Km</b>

Continuous monitoring of the contractor has taken place via the Site Inspector and with weekly visit from Richard Freeman (FTL).

The physical progress for the original scope by end of the reporting period stands at: Preparatory and clearing works - 49.6 km (100%); Drainage and structures (pipe and box culverts) – 100%; gravelling - 98%; embankments – 99%; grouted stone pitching – 50%; and scour checks – 43%.

The additional scope physical progress stands at: Setting out – 5.4 km (17%); site clearing – 17.4 km (55%); and reshaping – 5km (15.8%). It is noted that the Contractor is currently behind schedule on his work plan. The contract period for the original scope finished 22<sup>nd</sup> May 2015.

It is anticipated that the Contractor will not be able to complete the works as scheduled due to the inconsistency between the work load and its available resources on site, hence, estimated delays is of about two months now.

### 3.2.3 Lofa

The Phase I road links and contract data is shown below.

1.	Barkedu-Jamulor-Moibadu	8.3 km
2.	Bitijama	3.6 km
3.	Galamai	1.7 km
<b>Total</b>		<b>13.6 km</b>

Phase II road links is shown below.

1.	John's Town-Bulor	15.0 km
<b>TOTAL</b>		<b>15.0 Km</b>

The additional scope physical progress stands at: Mobilization 80%; and site clearing – 10km (67%).

### 3.2.3 Nimba County

Contract and modification have been awarded to 21<sup>st</sup> Century Corporation Inc.

**The Phase I** road links is shown below.

1.	Bahn-Payee-Zuoplay	14.9 Km
2.	Dwonwea-Zoe Lappa	4.1 Km
3.	Duanpea	2.5 Km
<b>TOTAL</b>		<b>21.5 Km</b>

**Phase II** road links is shown below.

1.	Gogein-Zuaplay junction – Doumpa-Zuaplay	22.1 Km
2.	Gaopa-Garwompa	5.8 Km
<b>TOTAL</b>		<b>27.9 Km</b>

During the month under review the works undertaken included the following:

**Phase -I roads**

- Repair of defects (compaction of shoulders) on Bahn - Payee Road.
- Routine maintenance works on completed sections and culvert locations.
- Completed concrete casting to Lee bridge deck.

**Phase -II roads**

- Concrete culvert fabrication at Gogein site
- Continuation of concrete pipe culvert construction works on Gaopa – Garwompa road
- Site clearing on Gogein – Zuaplay junction road.

The contractor indicated that they lost (80hrs) 10days of working time due to bad weather.

**Construction oversight summary:**

Bong County: Total number of links (Phase I and II): 81.2 KM

Nimba County: Total number of links (Phase I and II): 49.4 KM

Lofa County: Total number of links (Phase I and II): 28.6 KM

**3.3 Objective 2 – Design of Prioritized Road Links****General:**

Section 3.1 indicates the proposed team structure for delivery of outputs on this component. Outputs for the design team are listed below:

**Field Survey Details:**

Field surveys are composed of the following components:

1. Community sensitization – District Commissioners, Paramount Chiefs and traditional leaders of communities along road link.
2. Chaining of road links.
3. Current land use within road corridor– providing type/density of clearance required and presence of cash crops within road corridor.
4. Culvert location, sizing, identification of inlet and outlet structures and length/nature of outlet channel (includes topographic survey).
5. Carriageway defect identification and selection of remedial interventions.
6. Selection of Geometric cross section – a function of traffic characteristics and topography either side of the road corridor.



7. Topographic survey along road link centerline and selection of appropriate longitudinal storm drainage interventions.
8. Road Inventory location and description of existing road assets, villages, schools etc.
9. Environmental and social aspects.

#### **Team 1: Road works Lofa and Nimba:**

Roads surveyed up to the end of this reporting period: 92.7 km for Nimba County and 96.4km for Lofa County.

It is noted that Konia-Zigida road link was suspended and advised by USAID to replace it with Bulor- Goyala (1.8km).

Similarly, from the Nimba prioritized list, 6 short road links were suspended and replaced with Graie-Toweh Town-Yourpea 2-Yourpea 1 road (47.7 km).

#### **Team 2: Road Works Bong and Grand Bassa**

Team 2 is supported by a surveying agency, Geo-Surv for field survey components requiring topographic support.

Roads Surveyed up to this reporting period is: 139.13 km in Grand Bassa and 57.76 km in Bong. It is noted that all project roads in the two counties have been surveyed.

#### **Team 3: Box Culverts, Lofa, Nimba, Bong and Grand Bassa**

Box Culvert surveys include collection of data for hydrology of river and hydraulic design of box culvert apertures.

During the present reporting period only one box culvert at Ben Lougan – Kro town, in Grand Bassa County was surveyed.

Total of Box Culverts surveyed so far is 37.

#### **Team 4, Bridge Design**

Mobilization of team members started in the beginning of this reporting period with the bridge design team leader and the geotechnical specialist in addition to the topographic survey crew.

#### **Summary:**

The prioritized road links in the four counties subject to design have been surveyed summing to a total of 393.39 km.

The road links and details are listed below:

<b><i>Bong County</i></b>		
1	Foequelleh-Morgan	2.20 km
2	Foequelleh-Menequah-Yowee	13.35 km
3	Felela-Jarwuta	9.13 km
4	Wensue-Kpai	8.78 km
5	Sinyea-Kayata	13.3 km
6	Bassa Town-Veleyan-Molonakpaiga	11.0 km
<b>Total</b>		<b>57.76 Km</b>
<b><i>Nimba County</i></b>		
1	Garwompa-Nyonkiayee	22.5 km
2	Kpai-CNC Junction (Zao)	10.0 km
3	Boyee Junction-Goekorpa	12.5 km
4	Graie-Toweh Town-Yourpea 2	47.7 km
<b>Total</b>		<b>92.7 km</b>

***Lofa County***

1	John's Town Tusu	10.8 km
2	Koiba City-Koilahun-Bolahun	9.4 km
3	Checkpoint-Bassamolahun-Ngorkohun	6.7km
4	FoyaTown-Yasadu	14km
5	Foya Town-Sangai-Kelima Pombor	9.8km
6	Bulor – Goyala	1.8km
7	Zelemai-Womai	22.4 km
8	Zorzor-Yeala Boarder	7 km
9	Zorzor-Kpaiyea-Gbarnway	14.5 km
<b>TOTAL</b>		<b>96.4km</b>

***Grand Bassa County***

1.	Ben Luogan-Kor	2.48 km
2.	Blewein-Doewein-Sarwain	9.58 km
3.	Compound 1-Little Bassa-Vermah	21.82 km
4.	Compound 1-Doezoh	0.85 km
5.	Compound 2-Zahn	18.80 km
6.	Garpu-Behn	6.30 km
7.	James Hennry-Kardor	11.95 km
8.	Karsuah-Newcess Beach	10.20 km
9.	Siah-Weiker	3.20 km
10	Tain-Frank	2.13 km
11	Waka-Johnny Tutu	7.28 km
12	Waka-Compound 2	20.59 km
13	Yonbehn-Grand Kola	23.95 km
<b>TOTAL</b>		<b>139.13 Km</b>

### **3.4 Objective 3 – Capacity Building**

#### **MPW Feeder Road Engineers:**

The four (4) MPW Feeder Roads Engineers deployed to the project were mobilized in first week of August. Two of them have been mobilized in Bong County, one more in Lofa and the fourth engineer in Nimba. All of the MPW staff have been exposed to road and culverts design; after completing the training, they will be utilized to assist the design works since they have already experience in Feeder Roads.

#### **A & E Firm Trainees:**

The A & E firms' trainees were mobilized since late May and immediately exposed to the different capacities and completed the on-the job training end of this month of August.

During the time of exposure, several evaluations were conducted; results appear to be very positive as there was always a great spirits in participation by each one of the trainees. They were exposed were: Field topographic surveys, soil investigation, hydrology data collection; construction oversight and culvert design.

The A&E firms' owners also conducting separate evaluations of their employees and providing information to the FTLs as feedback.

### 3. PROJECT CHALLENGES

The following items have been encountered recently which are continuing and pose challenges to the ES3R team and Project:

Challenge / Issue	Mitigation / Resolution
<b>Road and Bridge Design - time to complete</b>	Current staff to double their efforts for timely completion, and with the addition of various resources such as printers, lap top, etc.
<b>Rainy season</b>	Construction activities and oversight to take place intermittently

## **5. OUTLINE SCHEDULE**

### **5.1 Outline Schedule for September 2015**

#### **Preamble**

The Year 2 Work Plan was submitted to USAID on 27 February. The strategy remains the continuance of the construction oversight for the original 84 km (plus an additional 75 km from modification four), design of 380 km (updated to 393km) road links and capacity building of the A&E Firms. The additional 18 km may be a subject of cost variation which will be analyzed and proposed in upcoming reports.

Since field survey of all project roads in the four counties were completed by the end of July, the ES3R team will focus on entering the survey data and commence designs. The Bridge Design Team will be fully mobilized and commence field surveys and design of bridges in first week of August.

#### **Objective 1 – Construction Oversight**

ES3R field staff will continue to provide construction oversight to the on-going three contracts in Bong, Lofa and Nimba in Phase –II (plus any remaining Phase 1 elements).

It is planned that Bong and Nimba Phase I road links will also attain substantial completion certificates by the end of September. Oversight of the additional 74 km is provided by the ES3R team and will continue through the end of December 2015 unless otherwise modified by USAID.

## **Objective 2 – Design and Contract Documents**

Team 1: Lofa and Nimba will continue with designs and tender documentation for Bulor – Tusu and Bulor – Goyala in Lofa and Garwompa- Nyonkaiyee in Nimba County.

Team 2: Bong and Grand Bassa will continue with designs and tender documentation for Waka town–Compound 2 – 21km; Compound 2–Zahn town- 19km; and Waka town-Johnny Tutu town- 7km in Grand Bassa.

Team 3: Box Culverts Bong Grand Bassa and Nimba will continue with design and tender documentation.

Team 4: Bridge Team is fully mobilized and has undertaken field site surveys and geotechnical investigations for design of bridges.

## **Objective 3 – Capacity Building**

Training and capacity building of the five Engineers from the A&E Firms will conclude in first week of September with the Workshop on Roads to Business Development which started on 25 August.

On the job trainees were guided in providing construction oversight for the three active contracts, data entry and design of roads. In addition they were exposed to the field survey works in preparation for road and culverts design.

The last assessment of their performance aimed to identify technical knowledge transfer was conducted during August which will provide a feedback to all respective parties.

Workshop on Road to Business have been scheduled from which an anticipated 10 persons will be in attendance at the director/manager level of the five AE firms.